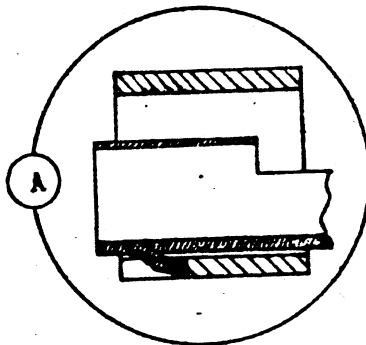
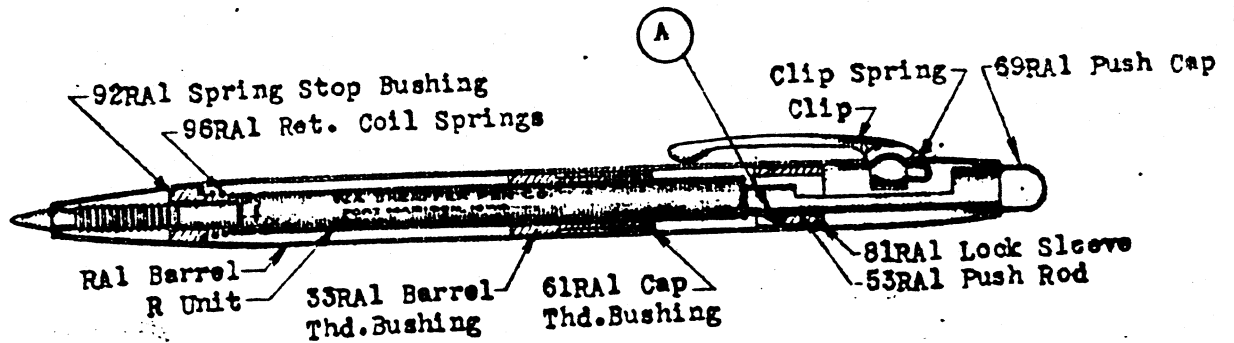


RA1 STRATOWRITER



ENLARGED VIEW OF LOCK

PROCEDURE FOR REPAIR - PAGE 57

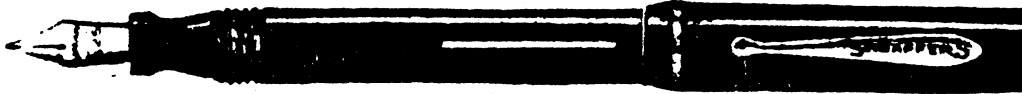
W.A. SHEAFFER PEN CO.

DR'N BY <i>72</i>	CHK'D BY	OK'D BY	DATE <i>1-12-48</i>
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SYM NO. K79-I-1000-PAGE 33

UNIT: IDENTIFICATION CHARTS

Pens Grouped According to Diameters & Lengths of Barrels & Caps



ILLUSTRATED PEN 325SC
Actual Size

PEN SYMBOL	3-25SC			
TRADE MARK	None			
NET WT. GRAMS	3.50			

SOME OF THE DISTINGUISHING MARKS

WRITE POINT	No			
WIDTH OF BAND	1/16" Gold			
LEVER OR FLIGHTER	Lever			
CLIP OR RING	Clip			
COILS	L+J+P			
FWO. FOR REPAIR	Page 55			

PARTS

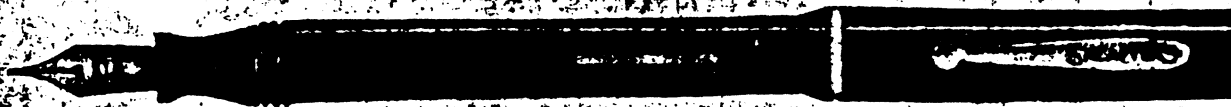
CAP	Not Available			
BBL	" "			
SECT	" "			
FEED	" "			
POINT	33			
LEVER	2			
LEVER TYPE	Pin Type			
SAC	2S			
BAR	2S			
DISPENSE	Non-L-T			

W.A. SHEATER PEN CO.

DMN BY *ZP* CHK'D BY *G* OK'D BY *ONG* DATE *1-12-48*

SYM. NO.
K79-I-1000 PAGE 34

UNIT - IDENTIFICATION CHARTS



ILLUSTRATED PEN - 3-250

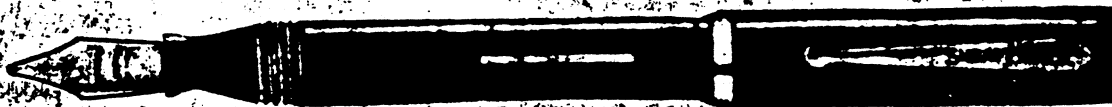
Actual Size

PEN SYMBOL	3-250	T460	T5-300		
TRADE NAME	None	None	None		
RETAIL PRICE	3.50	5.00	5.00		
SOME OF THE DISTINGUISHING MARKS					
WHITE DOT	No	No	No		
WIDTH OF BAND	1/16"	1/16"	2-1/16" Bands or 1-5/32"		
POINT	5-25	46	5-30		
LEVER-PLUNGER	Lever	Lever	Lever		
CLIP OR RING	Clip	Clip	Clip		
COLOR	L-R	L-J	L-J Black Ends		
PROCEDURE FOR REPAIR-Page 56					
PARTS					
PIP					
BEL	NOT AVAILABLE				
SECT	3T	NOT AVAILABLE			
FEED	3T	NOT AVAILABLE			
POINT	33	46	5-30		
LEVER	2L	2L	2L		
LEVERWIRE	Pin Type	Pin Type	Pin Type		
SAC	2L	2L	2L		
BAR	2L	2L	2L		
GUARANTEE	Non-Lft.	Non-Lft.	Non-Lft.		

W.A. STEAHER PEN CO.

DRN BY *TP* CH'K'D BY *GF* O.K'D BY *(ONG)* DATE *1-12-48*

SYM. NO. **K79-I-1000** PAGE 35



ILLUSTRATED PEN - 74SC - LIFETIME
 Actual Size

74SC	630SC	46SC	T85SC
74SC	630SC	46SC	T85SC
LIFETIME	LIFETIME	LIFETIME	LIFETIME
7.50	5.00	5.00	12.00
SOME OF THE DISTINGUISHING MARKS			
White Dot	Yes	No	No
RIDGE ON BAND	1/8"	3/32"	3/32"
POINT	74 Lifetime	630	46 T8 Lifetime
LEVER OF PLUNGER	Lever	Lever	Lever
CLIP OF CAP	CLIP	CLIP	CLIP - 14K
COBALT	1-1	1-1	1-1
PAGE NO. REPAIR PAGE	5	5	5
BARREL	Not available	Not available	Not available
SECTION			
POINT	74	630	46
LEVER			
LEVERWIRE	Pintype	Pintype	Pintype
SAC	4S	4S	4S
BAR	4S	4S	4S
SOLVENT	172	172	172

14K
 time
 14K
 k

type

W.A. SHEAFFER PEN CO.

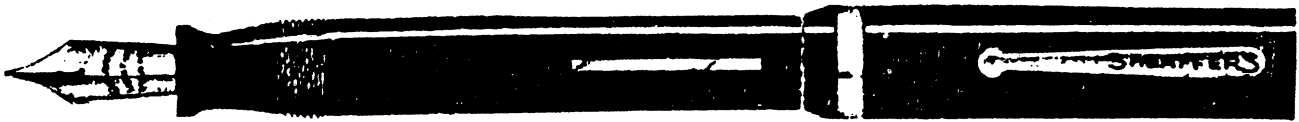
DESIGN BY *TR* CHECKED BY *G* OK'D BY *WAG* DATE *1/2-48* SYM. NO. *K79-I-1000*
 UNIT: IDENTIFICATION CHARTS

Actual Size

PEN SYMBOL	84C	46C	530C	T89C	T88C
TRADE NAME	Lifetime	None	None		
RETAIL PRICE	8.75	5.00	5.00		
SOME OF THE DISTINGUISHING MARKS					
WHITE DOT	Yes	No	No	Yes	Yes
WIDTH OF BAND	1/8"	1/16" or 3/32"	Two 1/16" or One 3/32"	1/4" - 14K	1/8" - 14K
POINT	84 Lifetime	46	5-30	8 Lifetime	8 Lifetime
LEVER - PLUNGER	Lever	Lever	Lever	Lever	Lever
CLIP OR RING	Clip	Clip	Clip	Clip 14K	Clip 14K
COLORS	L-J	L-J	L-J-K Ends	Black	Black
PROCEDURE FOR REPAIR	PAGE 55				
PARTS	Not available	Not available	Not available	Not available	Not available
CAP	Not available	"	"	"	"
EBL	Not available	"	"	"	"
SECT.	Not available	"	"	"	"
FEED	Not available	"	"	"	"
POINT	8	46	5	8	8
LEVER	8L	4	4	8	8
LEVER WIRE	Pintype	Pintype	Pintype	Pintype	Pintype
SAC	4L	4L	4L	8L	8L
BAR	4L	4L	4L	8L	8L
GUARANTEE	L-T.	Non-LFT.	Non-Lft.	Lft.	Lft.

W.A. SHEAFFER PEN CO.

DRN BY <i>TP</i>	CHK'D BY <i>G</i>	O.K'D BY <i>ONG</i>	DATE <i>7-15-48</i>	SYM. NO. K79-I-1000-PAGE 37
IDENTIFICATION CHARTS				



ILLUSTRATED PEN • 8C
Actual Size

PEN SYMBOL	8C	85C	89C	7-30C	89C
TRADE NAME	LIFETIME		AUTOGRAPH LIFETIME	SECRETARY	LIFETIME
RETAIL PRICE	8.75	12.00	16.00	7.00	12.00
SOME OF THE DISTINGUISHING MARKS					
WHITE DOT	Yes	Yes	Yes	No	Yes
WIDTH OF BAND	1/8" Gold	3/8" 14K	1/2" 14K	3/32"	1/8" 14K
POINT	8L Lifetime	8L Lifetime	8L Lifetime	730	8L
LEVER PLUNGER	Lever	Lever	Lever	Lever	Lever
CLIP OR CLASP	Clip	Clip	Clip	Clip	Clip
COLORS	L-M-K-J	Black only	Black only	L-J	Black
PRO. FOR REPAIR	PAGE		55		
PARTS					
CAP	Not available	Not available	Not available	Not available	Not available
BARREL	"	"	"	"	"
SECTION	"	"	"	"	"
FEED	"	"	"	"	"
POINT	8	8	8	7-30	8
LEVER	8	8	8	8	8
LEVERWIRE	Pintype	Pintype	Pintype	Pintype	Pintype
SAC	8L	8L	8L	8L	8L
BAR	8L	8L	8L	8L	8L
GUARANTEE	LFT	LFT	LFT	Non-LFT	LFT

W.A. SHEPHERD PEN CO.

DRN BY *TP* CHK'D BY *GF* O.K'D BY *ONG* DATE 1-12-48

SYM. NO.
K79-I-1000-PAGE 38

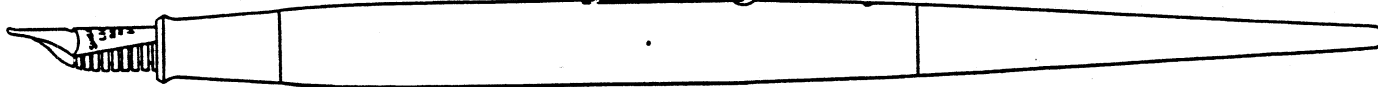
UNIT: IDENTIFICATION CHARTS



ILLUSTRATED PEN-92WD-DESK PEN
Actual Size

SYMBOL	92WD	79WD
PRICE	10.50	10.50
Some Identification Marks		
WHITE DOT	Yes	Yes
POINT	92	79
LEVER OR PLUNGER	Plunger	Plunger
COLORS	C-L	C-L
PROCEDURE FOR REPAIR PAGE #	41	41
PARTS		
EBL.	92WD	79WD
NIB UNIT	92	79
PLUNGER	5374W	5374W
PLUNGER WASHER	#2	#2
QUILL	92WD	79WD
GUARANTEE	*	*
MANUFACTURED	1945 to Present Time	

* If the point is stamped Lifetime, just the point is guaranteed. All other parts excluded. If point is not stamped Lifetime, all parts are guaranteed against defects in material and workmanship only. The 79W may have a vac-fill unit. If so the symbol of the unit is 72W and the plunger symbol is 72W.



ILLUSTRATED PEN-74D-DESK PEN
Actual Size

SYMBOL	74D	5D
PRICE	8.00	5.00
Some Identification Marks		
WHITE DOT	Yes	No
WIDTH OF BAND	1/8" or plain	1/8" or plain
POINT	74FT	5FT
LEVER OR PLUNGER	Lever	Lever
COLORS	J-K-L-B	J-K-L-B
PROCEDURE FOR REPAIR PAGE #	47	47
PARTS		
BBL.S.	74D	5D
SECT.	74DG	5DG
FEED	74W	5W
POINT	74FT	5FT
LEVER	4A	4A
BAR	4T	4T
SAC	4A	4A
QUILL	74D	5D
GUARANTEE	LFT	Non-Lft.
MANUFACTURED	Prior to 1945	

NOTE- Some of the older models were made of solid stock and have a solid back end or quill. These models take the old two piece pressure bar and the oversize long sac.

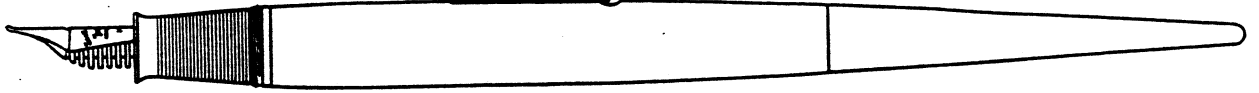


ILLUSTRATED PEN-3D-DESK PEN
Actual Size

SYMBOL	3D	T74D*
PRICE	3.00	8.00
Some Identification Marks		
WHITE DOT	No	Yes
WIDTH OF BAND	1/8" or plain	1/8" or plain
POINT	33	74FT
LEVER OR PLUNGER	Lever	Lever
COLORS	B-L	B-L
PROCEDURE FOR REPAIR PAGE #	47	47
PARTS		
BBL.	3D	T74D
SECT.	3DG	T74DG
FEED	3W	74W
POINT	33	74FT
LEVER	2A	4A
BAR	2T	4T
SAC	2A	4A
QUILL	3D	T74D
GUARANTEE	Non-Lft.	LFT.
MANUFACTURED	Prior to 1945	

* The T74D is a 3 size holder with a 74 point.

NOTE: Some of the older models were made of solid stock and have a solid back end or quill. These take the old 2 piece pressure bar and the oversize long sac.



ILLUSTRATED PEN-55D-DESK PEN
Actual Size

SYMBOL	55D
PRICE	6.00
Some Identification Marks	
WHITE DOT	No
POINT	#5
LEVER OR PLUNGER	Lever
COLORS	Black only
PROCEDURE FOR REPAIR PAGE #	47
PARTS	
BBL.	55D
NIB	#5
SECT.	55
FEED	5W
LEVER	3VA
PRESSURE BAR	4V
SAC	3VA
QUILL	55T
GUARANTEE	NON-LFT.
MANUFACTURED	1946 to present time



ILLUSTRATED PEN 92SD DESK PEN
ACTUAL SIZE

SYMBOL	92SD	55SD
PRICE	10.50	6.00

SOME IDENTIFICATION MARKS

White Dot	Yes	No
Point	#92 Sh.	#5 Sh.
Filling Mechanism	Touchdown	Touchdown
Thread Ring	Yes	Yes
Procedure for Repair	59A	59A
Bbl.	92SD	92SD
Bbl. End	920S	55SD
Feed	920S	55T
Nib Unit	#92 Sh.	#92SH.
Protector Tube	920S	920S
Plunger Tube	920S	920S
Sac	920S	920S
Quill	92SD	92SD
Manufactured	1949 to present time	

Note: Exchange price on 92 Sheaffer Nib unit \$1.50 list.

PLUNGERS FOR SHEAFFER PENS



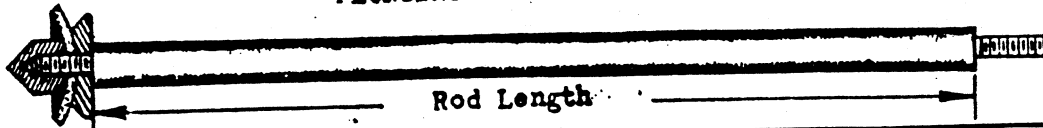
Red Length

SYMBOL	ROD LENGTH	WASHER SIZE	USED IN THE FOLLOWING PENS		
			SYMBOL	TRADE NAME	RETAIL PRICE
8W	2-19/64"	#4	8W	Premier	10.00
			85W	Heritage	20.00
5W	2-19/64"	#4	74W	Statesman	10.00
			5W	Admiral	5.00
			75W	Excellence	20.00
73W	2-19/64"	#2	73W	Sovereign	8.75
			3W	Craftsman	3.50
			2W	Junior	2.75
			94W	Valiant	12.50
			39W	Crest Deluxe	17.50
			92WD	Statesman Desk Pen	10.50
			95WH		
			49W	Crest Triumph	15.00
			79WD		
			940W	Valiant	12.50
			93W	Triumph	12.50
399W	Crest Masterpiece	50.00			
92W	2-3/16"	#2	23W	Cadet	2.75
			33W	Craftsman	3.50
			59W	Admiral	5.00
			79W	Sovereign II	8.75
			92W	Statesman	10.00
			37W	Crest	15.00
93WM	1-17/64"	#2	23WM	Minerva	2.75
			33WM	Diana	3.50
			59WM	Milady	5.00
			79WM	Lady Sheaffer	8.75
			92WM	Tuckaway II	10.00
			940MA	Autograph Tuckaway	20.00
			37WM	Crest Tuckaway	15.00
59WM	Crest Delux Tuckaway	17.50			
73WH	2-13/64"	#2	73WH	Vigilant	8.75
			5WH	Commandant	3.50

W.A. SHEAFFER PEN CO.

DRN BY R.L.C. CH'KD BY G QKD BY OWS DATE 3-29-50 SYM. NO. K79-I-1000 PAGE 39
 UNIT: IDENTIFICATION CHARTS

PLUNGERS FOR SHEAFFER PENS



SYMBOL	ROD LENGTH	WASHER SIZE	USED IN THE FOLLOWING PENS		
			SYMBOL	TRADE NAME	RETAIL PRICE
74WH	2-13/64"	#4	74WH	Valiant	10.00
			5WH	Defender	5.00
53WS	2-5/64"	#2	73WS	Lady Sheaffer	8.75
			53WS	Milady	5.00
			3WS	Miss Universe	3.50
			2WS	Junior	2.75
47W	2-5/16"	#4	47W	Crest	13.75
26WS	1-59/64"	#2	26WS	Lady Crest	12.75
46AW	1-17/64"	#2	46AW	Tuckaway	12.00
			49WM	Tuckaway	15.00
			93WM	Triumph Tuckaway	12.50
77W	2-3/16"	#2	72W	Statesman	10.00
			77W	Sovereign	8.75
77WM	1-47/64"	#2	77WM	Sovereign Tuckaway	8.75
			72WM	Statesman Tuckaway	10.00
			940WM	Valiant Tuckaway	12.50

W.A. SHEAFFER PEN CO.

DRN BY R.L.C. CH'K'D BY G OK'D BY ONG DATE 3-29-50
 UNIT- IDENTIFICATION CHARTS

SYM. NO.
K79-I-1000-PAGE 40

0L SAC 7880
 1888
 1888
 1888
 1888
 1888
 1888

1L SAC
 1888
 1888
 1888
 1888
 1888

2L SAC
 1888
 1888
 1888
 1888
 1888

3L SAC
 1888
 1888
 1888
 1888
 1888

4V SAC
 94T
 94T AUTO
 940T
 59T
 59TX
 74H
 6H

4A SAC
 74T
 75T
 5T

2L SAC
 325C
 T46C
 T5-30C

2A SAC
 73T
 3T
 2T
 73H
 3H

2S SAC
 3-255C

3VA SAC
 92T
 79T
 59T
 72T
 79TAA
 55T
 33T
 23T
 33TAA
 77T
 37T
 37TX
 29T-X-C
 93T
 49T
 73V
 53V
 3V
 2V
 735V
 82T
 920T

SACS FOR SHEAFFER PENS
 AND THE PENS THEY ARE USED IN

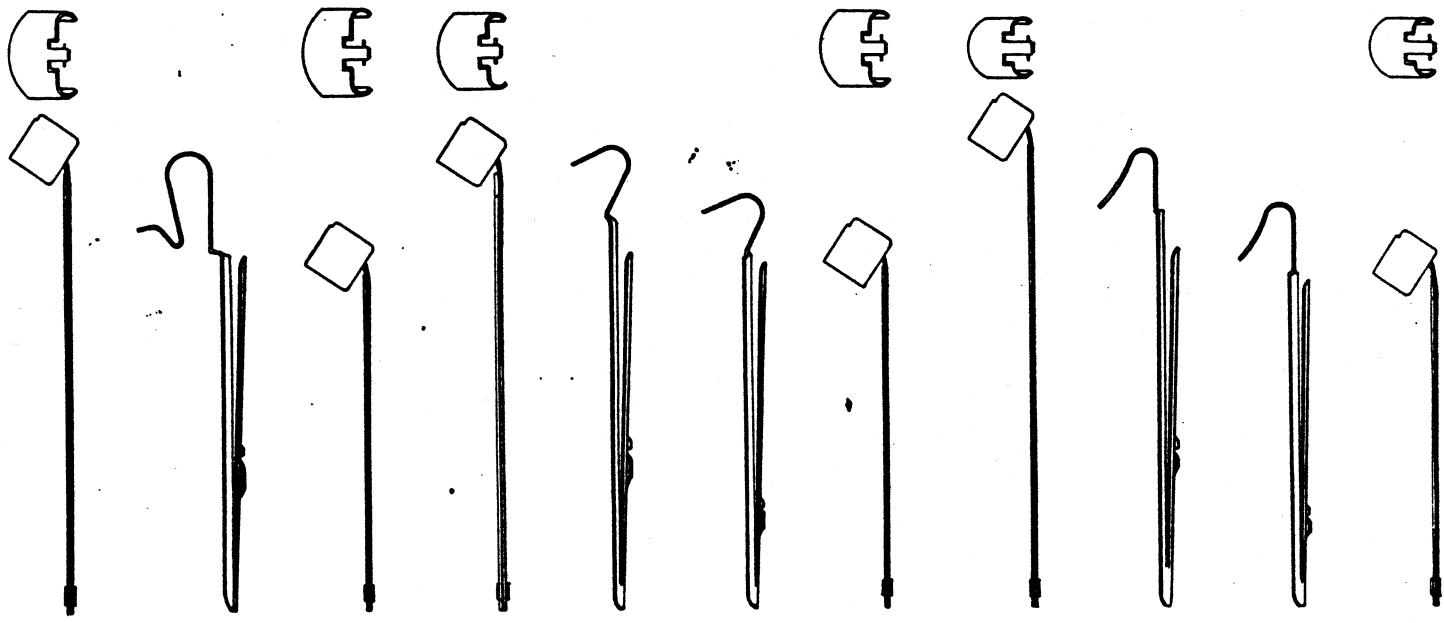
THIN MODEL TOUCH-DOWN
 121S, 112S, 112SX,
 121S AUTO, 338, 52S

SHORT TOUCH-DOWN
 920SM AUTO, 290SM
 290SMX, 82SM

LONG TOUCH-DOWN
 920S, 398S
 920S AUTO, 290S
 290SX, 82S, 92SD,

PRESSURE BARS FOR SHEAFFER PENS

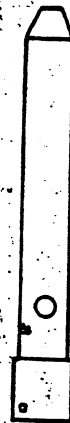
AND THE SYMBOL OF THE PENS THAT THEY ARE USED IN



8L	8T	8S	4L	4T	4V	4S	2L	2T	2V	2S
8C 85C 7-30C 88C	8T 85T	**8T	84C 74C 46C 5-30C T89C **74D **5D	74T 75T 5T 74H 5H *74D *5D	74V 5V 94T 94T-Auto 940T 39T 39TX	74SC 5-30SC 46SC T85SC	3-25C T46C T5-30C **74D **3D	73T 3T 2T 73H 3H *74D *3D	92T 79T 59T 72T 79TA 82T 920T 55T 33T 23T 33TA 77T 37T 37TX 93T 49T 73V 53V 3V 2V 735V	3-25SC

CODE: ** OLD STYLE
* NEW STYLE

PROTECTOR TUBES & PLUNGER TUBES FOR SHEAFFER TOUCHDOWN PENS & THE MODELS THEY ARE USED IN

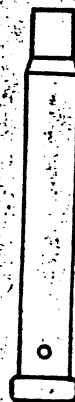
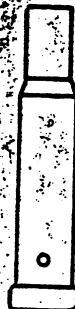


920S
399S
920S AUTO
290S
920S
82S
92SD
290SXC
55SD

PROTECTOR TUBES

290SV
920SM AUTO
290SM
74SV
82SM
290SMXC

121S
112S
112SX
121S AUTO
121S
33S
52S



920S
399S
920S AUTO
290S
920S
82S
92SD
290SXC
55SD

PLUNGER TUBES

290SM
920SM AUTO
290SM
74SM
82SM
290SMXC

121S
112S
112SX
121S AUTO
121S
33S
52S

W.A. SHEAFFER PEN CO.

DRN BY: R.C.C. CHK'D BY: G.F. O.K'D BY: LONG DATE 3-29-50

SYM. NO

UNIT: IDENTIFICATION CHART

**** PROCEDURE FOR SHEAFFER PEN REPAIR ****

On plunger fill pens listed on pages 9, 11, 13, 18, 19, 20, 21, 22, 23, 24, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

- | | | |
|--------------------------------------|-------|---|
| #1 Remove Nib Unit | ----- | Place point in 120 degree water for 10 seconds to soften sealing compound. Use rubber for holding unit. Place thumb on feed and fore-finger on nib and unscrew, keeping feed and nib in line. |
| #2 Remove Barrel Cap | ----- | Use lock nut wrench. Place wrench in retaining nut slot holding plunger rod tight and unscrew barrel cap with other hand. |
| #3 Remove Ball Nut and Retaining Nut | ----- | Use rubber. Place rubber over ball nut and padded parallel pliers on plunger rod and unscrew. Slip off retaining nut. |
| #4 Remove Plunger from Barrel | ----- | Use plunger removing tool. Push on end of plunger rod until washer end is clear of mouth of barrel. |

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

REASSEMBLE

- | | |
|--|---|
| #1 Replace Plunger in Barrel----- | Use plunger lead and plunger assembling tool. Place lead on end of plunger rod and insert through barrel and packing unit, pushing plunger on through with plunger assembling tool. |
| #2 Replace Retaining Nut and Ball Nut----- | Use rubber and shellac. Slip retaining nut on rod. Spread shellac on threads and then place rubber over ball nut and padded parallel pliers on plunger rod and tighten. |

#3 Replace Barrel Cap

Use lock nut wrench.

Place wrench in retaining nut slots, holding plunger rod tight and screw barrel cap on with other hand.

#4 Replace and Seal Unit

Use rubber and sealing compound.

Start unit in barrel making sure that the plunger is retracted and spread warm sealing compound evenly over exposed unit threads. Grip feed and nib as before and tighten firmly. Clean off excess sealing mixture with gasoline.

NOTE: If any nib or triumph nib unit repair is needed, refer to Pages 60-64.

On lever fill pens listed on pages 10, 12, 18, 19, 21, 23, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

- | | | |
|--|-------|---|
| #1 Remove Nib Unit | ----- | Place point in 120 degree water for 10 seconds to soften sealing compound.
Use rubber for holding unit.
Place thumb on feed and forefinger on nib and unscrew, keeping feed and nib in line. |
| #2 Remove Barrel End
(Only on the lever type pens are the barrel ends removable.) | ----- | Use padded section pliers
Place pliers around barrel end unscrew. |
| #3 Remove Sac | ----- | Use burnishing tool.
Break seal of sac with burnisher and pull off. |
| #4 Remove Bar from Barrel | ----- | Use 2-prong bar puller.
Reaching into barrel, hook shoulder of bar and remove carefully. |
| #5 Remove Lever from Barrel | ----- | Use padded parallel pliers and 2-prong bar puller.
Grip lever close to barrel with padded parallel pliers and force down and forward toward mouth of barrel. Remove rest of way with 2-prong bar puller. |

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

ASSEMBLE

- | | | |
|----------------------------|-------|--|
| #1 Replace Lever in Barrel | ----- | Use lever assembling tool and padded mouth parallel pliers.
Place proper sized lever wire through lever and place in lever assembling tool. Insert lever into barrel and up through lever slot. Grasping lever with padded mouth parallel pliers and locate lever wire in groove. |
| #2 Replace Bar in Barrel | ----- | Use 2 and 4T bar pusher.
Place bar in position on pusher, insert into barrel so that emboss stop on the bar is directly under the lever at the point where the wire passes through the lever. |

#3 Replace Sac on Barrel End-----

Use sac spreader and shellac. Spread shellac on sac fit of the barrel end and place proper sac on spreader. Inserting barrel end into spread lip of sac and holding sac in place with forefinger removing spreader.

#4 Replace Barrel End -----

Use padded mouth section pliers. Start barrel end into barrel and tighten with pliers.

#5 Replace and Seal Unit -----

Use rubber and sealing compound. Start unit in barrel making sure that the plunger is retracted and spread warm sealing compound evenly over exposed unit threads. Grip feed and nib as before and tighten firmly. Clean off excess sealing mixture with gasoline.

NOTE: If any nib or Triumph nib unit repair is needed, refer to Pages 60-64.

On plunger fill pens listed on pages 27, 28, 29, 30, 31, 32, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Section Feed and Nib from Barrel -----

Use padded mouth section pliers. Place pliers around section and unscrew.

#2 Remove Feed and Nib from Section -----

Use bench block, feed punch, and hammer. Place nib and feed into proper hole in block, and place punch over insert of feed and drive out with hammer.

#3 Remove Barrel Cap -----

Use padded parallel pliers. Hold plunger rod secure with padded pliers and unscrew barrel cap.

#4 Remove Plunger from Barrel-----

Use plunger removing tool. Push on end of plunger rod until washer end is clear of mouth of barrel.

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

ASSEMBLE

#1 Replace Plunger in Barrel-----

Use plunger lead and plunger assembling tool. Place lead on end of plunger rod and insert through barrel and packing unit, pushing plunger on through with plunger assembling tool.

#2 Replace Barrel Cap -----

Use padded parallel pliers and shellac. Spread shellac on rod thread. Hold plunger rod firmly with pliers and screw barrel cap on plunger rod.

#3 Push Feed and Nib into Section -----

Use nib pushing pliers, pushing guage, nib gauge chart, and hammer. Place Nib in right position on feed and start into section. Gauge and determine depth nib should be pushed, and place to that depth in pliers. Then rest pliers on table and drive section over nib and feed.

#4 Replace the Assembled
Section, feed, and nib,
in barrel.

Use padded mouth section pliers.
Start section into barrel, making
sure plunger is retracted, and
tighten with pliers.

NOTE: If any nib or Triumph nib unit repair is needed, refer to Pages 60-64.

On lever fill pens listed on pages 27, 28, 29, 31, 32, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

- | | |
|---|--|
| #1 Remove Section, Feed, Nib, and Sac from barrel ----- | Use padded mouth section pliers. Place pliers on section and twist or rock out. |
| #2 Remove Sac from Section ----- | Use burnishing tool. Break seal of sac with burnisher and pull off. |
| #3 Remove Feed and Nib from Section ----- | Use bench block, feed punch, and hammer. Place nib and feed into proper hole in block, and place punch over insert of feed and drive out with hammer. |
| #4 Remove Bar from Barrel ----- | Use 2-prong bar puller. Reaching into barrel, hook shoulder of bar and remove carefully. |
| #5 Remove Lever from Barrel ----- | Use padded parallel pliers and 2-prong bar puller. Grip lever close to barrel with padded parallel pliers and force down and forward toward mouth of barrel. Remove rest of way with 2-prong bar puller. |

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

ASSEMBLE

- | | |
|----------------------------------|--|
| #1 Replace Lever in Barrel ----- | Use lever assembling tool and padded mouth parallel pliers. Place proper size lever wire through lever and place in lever assembling tool. Insert lever into barrel and up through lever slot. Grasping lever with padded mouth parallel pliers and locate lever wire in groove. |
| #2 Replace Bar in Barrel ----- | Use 2 & 4T bar pusher. Place bar in position on pusher, insert into barrel so that emboss stop on the bar is directly under the lever at the point where the wire passes through the lever. |

#3 Push Feed and Nib into Section -----

Use nib pushing pliers, pushing gauge, nib gauge chart, and hammer. Place nib in right position on feed and start into section. Gauge and determine depth nib should be pushed, and place to that depth in pliers. Then rest pliers on table and drive section over nib and feed.

#4 Replace Sac on Section -----

Use sac spreader and shellac. Spread shellac on sac fit of the section and place proper sac on spreader. Inserting section into spread lip of sac and holding sac in place with forefinger removing spreader.

#5 Replace Assembled Section-----
Feed, Nib, and Sac in Barrel

Use Bench Block. Place nib and feed into hole in block, start barrel over sac and section, and push against table.

NOTE: If any nib or Triumph nib unit repair is needed, refer to Pages 60-64.

On plunger fill pens listed on pages 10A, 13A, 14, 15, 16, 17 the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Nib and Feed	-----	Use nib pushing pliers. Place feed and nib in nib pushing pliers. Pull straight out without a twisting motion, until feed and nib are removed. If feed should break off, retract plunger and push feed into barrel and shake out after removing section.
#2 Remove Section Sleeve (Omit on 82W & 82WM)	-----	Use 33 Section puller. Insert puller in behind section and pull.
#3 Remove Barrel Cap	-----	Use lock nut wrench. Place wrench in retaining nut slot holding plunger rod tight and unscrew barrel cap with other hand.
#4 Remove Plunger from Barrel	-----	Use plunger removing tool. Push on end of plunger rod until washer end is clear of mouth of barrel.

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken or wrong parts should be replaced.

ASSEMBLE

#1 Replace Plunger in Bbl.	-----	Use plunger lead and plunger assembling tool. Place lead on end of plunger rod and insert through barrel and packing unit, pushing plunger on through with plunger assembling tool.
#2 Replace Bbl. Cap	-----	Use lock nut wrench. Place wrench in retaining nut slots, holding plunger rod tight and screw barrel cap on with other hand.
#3 Replace Sleeve in Bbl.	-----	Use no tools. Start sleeve into barrel and push against table till flush with barrel end.

#4 Push Nib and Feed

Use nib pushing pliers, pushing gauge, nib gauge chart, and hammer. Place nib in right position on feed and start into barrel. Gauge and determine depth nib should be pushed, and place to that depth in pliers. Then rest pliers on table and drive barrel over nib and feed. Use a plastic barrel protector over end of barrel when using the hammer pushing the nib and feed.

NOTE: If any nib or Triumph nib unit repair is needed, refer to Pages 60-64.

On lever fill pens listed on pages 14, 16, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Barrel End from -----
Barrel

Use padded mouth section pliers. Place pliers around barrel and unscrew or rock out.

#2 Remove Sac from Barrel -----
End

Use burnishing tool. Break seal of sac with burnisher and pull off.

#3 Remove Feed and Nib from -----
Barrel End

Use bench block, feed punch, and hammer. Place nib and feed into proper hole in block, and place punch over insert of feed and drive out with hammer.

#4 Remove Bar from Barrel -----

Use 2-prong bar puller. Reaching into barrel, hook shoulder of bar and remove carefully.

#5 Remove Lever from Barrel -----

Use padded parallel pliers and 2-prong bar puller. Grip lever close to barrel with padded parallel pliers and force down and forward toward mouth of barrel. Remove rest of way with 2-prong bar puller.

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

REASSEMBLE

#1 Replace Lever in Barrel -----

Use lever assembling tool and padded mouth parallel pliers. Place proper sized lever wire through lever and place in lever assembling tool. Insert lever into barrel and up through lever slot. Grasping lever with padded mouth parallel pliers and locate lever wire in groove.

#2 Replace Bar in Barrel -----

Use 2 and 4T bar pusher. Place bar in position on pusher, insert into barrel so that emboss stop on the bar is directly under the lever at the point where the wire passes through the lever.

#3 Push Feed and Nib into Section -----

Use nib pushing pliers, pushing gauge, nib gauge chart, and hammer. Place nib in right position on feed and start into section. Gauge and determine depth nib should be pushed, and right to that depth in pliers. Then rest pliers on table and drive section over nib and feed.

#4 Replace Sac on Barrel End -----

Use sac spreader and shellac. Spread shellac on sac fit of the barrel end and place proper sac on spreader. Inserting barrel end into spread lip of sac and holding sac in place with forefinger removing spreader.

#5 Replace Barrel End in Barrel -----

Use padded mouth section pliers. Start barrel end into barrel and tighten with pliers.

NOTE: If any nib or Triumph nib unit repair is needed, refer to Pages 60-64.

On lever fill pens listed on page 30, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Section, Feed,
Nib, and Sac from Barrel

Use padded mouth section pliers.
Place pliers on section and twist
or rock out.

#2 Remove Sac from Section

Use burnishing tool.
Break seal of sac with burnisher
and pull off.

#3 Remove Feed and Nib from
Section

Use bench block, feed punch, and
hammer.
Place nib and feed into proper
hole in block, and place punch
over insert of feed and drive out
with hammer.

#4 Remove Bar from Barrel

Use 2-prong bar puller.
Reaching into barrel, hook shoulder
of bar and remove carefully.

#5 Remove Lever from Barrel

Use padded parallel pliers and 2-
prong bar puller.
Grip lever close to barrel with
padded parallel pliers and force
down and forward toward mouth of
barrel. Remove rest of way with
2-prong bar puller.

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

ASSEMBLE

#1 Replace Lever from Barrel

Use lever assembling tool and
padded mouth parallel pliers.
Place proper sized lever wire
through lever and place in lever
assembling tool. Insert lever
into barrel and up through lever
slot. Grasping lever with padded
mouth parallel pliers and locate
lever wire in groove.

#2 Replace Bar in Barrel

Use 8T bar pusher.
Place bar in position on pusher,
insert into barrel so that emboss
stop on the bar is directly under
the lever at the point where the
wire passes through the lever.

#3 Push Feed and Nib into
Section. -----

Use nib pushing pliers, pushing gauge, nib gauge charts, and hammer. Place nib in right position on feed and start into section. Gauge and determine depth nib should be pushed, and place to that depth in pliers. Then rest pliers on table and drive section over nib and feed.

#4 Replace Sac on Section -----

Use sac spreader and shellac. Spread shellac on sac fit of the section and place proper sac on spreader. Inserting section into spread lip of sac and holding sac in place with forefinger removing spreader.

#5 Replace Assembled Section -----
Feed, Nib, and Sac in Barrel

Use Bench Block.
Place nib and feed into hole in block, start barrel over sac and section, and push against table.

NOTE: If any nib or Triumph nib unit repair is needed, refer to pages 60-64.

On lever fill pens listed on pages 34, 35, 36, 37, 38, the operations, tools, and methods are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Section, Feed, nib-----
and Sac

Use padded mouth section pliers.
Place pliers on section and twist
or rock out.

#2 Remove Sac from Section -----

Use burnishing tool.
Break seal of sac with burnisher and
pull off.

#3 Remove Feed and Nib -----
from Section

Use bench block, feed punch, and
hammer.
Place nib and feed into proper
hole in block, and place punch over
insert of feed and drive out
with hammer.

#4 Remove Bar from Barrel -----

Use solid hook bar puller.
Insert puller into barrel and hook
the heavy bar, withdrawing slowly.
When the bar appears at the mouth
of the barrel place thumb on bar
holding it to the puller withdraw
until the collar is free of the
barrel.

#5 Remove Lever from Barrel -----

Use pin pusher.
Push out pin with pin pusher.

After dismantling the pens, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

ASSEMBLE

#1 Replace Bar in Barrel -----

Use 2-piece bar pusher.
Take collar of proper size bar in
thumb and forefinger and insert into
barrel pushing it flush with the
mouth of the barrel. Place the 2-
piece bar pusher on the spring bar
and push into place so that the lever
slot in the bar is in line with the
lever slot in the barrel and the
emboss stop is in line with the pin
hole.

#2 Replace Lever in Barrel -----
and fill holes with wax.

Use lever wire and cutting pliers.
Place lever in slot and insert lever
wire through holes and cut off flush
with barrel. Take proper color wax
and fill pin holes.

#3 Push Feed and Nib into Section -----

Use nib pushing pliers, pushing gauge, nib gauge charts, and hammer. Place nib in right position on feed and start into section. Gauge and determine depth nib should be pushed, and place to that depth in pliers. Then rest pliers on table and drive section over nib and feed.

#4 Replace Sac on Section -----

Use sac spreader and shellac. Spread shellac on sac fit of the section and place proper sac on spreader. Inserting section into spread lip of sac and holding sac in place with forefinger removing spreader.

#5 Replace Assembled Section-----
Feed, Nib, and Sac in Barrel

Use bench block. Place nib and feed into hole in block, start barrel over sac and section, and push against table.

NOTE: If any nib or Triumph nib unit repair is needed, refer to pages 60-64.

PROCEDURE FOR STRATOWRITER REPAIR

Dismantle Caps

Operation in Sequence

#1 Remove Push Rod

Tools and Methods Used

Insert needle nose pliers into open end of cap. Grasp ear A, on lower end of push rod, with nose of pliers press it together. Push rod can now be pulled out.

#2 Remove Cap Thread Bushing

Use rubber square, hook puller and alcohol lamp. Grasp clip end of cap with rubber square. Pass threaded end through flame until solder is melted being careful not to discolor gold. Place hook puller behind thread bushing and pull out.

#3 Remove Lock Sleeve

Enough heat may have been applied on previous operation to loosen lock sleeve. If so, lock sleeve can be removed with hook puller. If not, apply more heat to center of cap.

#4 Remove Clip Spring & Clip

Use Push rod spreader. Insert tool in small end of cap and push clip spring out of clip box.

CAUTION: Whenever heat is applied to the cap, a new clip spring must be installed as heat will destroy the flexibility of the spring. Do not remove any more parts than are necessary to make repairs.

Reassemble

CAUTION: Use only Sheaffers special flux for soldering.

#1 Tin Lock Sleeve

Alcohol lamp, Soldering iron. Place soldering iron in flame of alcohol lamp until solder is softened. Apply rosin flux to lock sleeve. Roll in melted solder and wipe off the excess with a rag.

#2 Replace Lock Sleeve

Lock Sleeve Assembly Tool.
Place lock sleeve on assembly tool with cutout portion toward handle and with key extending through open portion, apply more flux to sleeve. Holding cap in left hand with clip hole up, start tool with flexible guide directly under and in line with clip hole. Push lock sleeve into cap as far as it will go. Remove tool and heat cap until solder on lock sleeve is melted.

PROCEDURE FOR STRATOWRITER REPAIR
(Cont'd)

Operation in Sequence

#3 Replace Thread Bushing

CAUTION: Use only Sheaffer's flux.

#4 Replace Clip & Clip Spring

#5 Replace Push Rod

#6 Clean inside thoroughly with carbon tetrachloride.

Tools and Methods Used

Alcohol Lamp

Screw thread bushing onto barrel. Place strip of solder around solder recess and apply flux. Push bushing into cap until cap and barrel shell meet. Unscrew cap from barrel and hold in flame until solder is melted.

Needle nose pliers and lock sleeve assembly tool.

Place clip in hole. Hold new clip spring with pliers and start into clip box through small end of cap. Remove plier. Push spring into box with end of lock sleeve assembly tool.

Push rod spreader and pliers. Using pliers squeeze sides of push rod together slightly. Start push rod into cap with portion toward clip. Push as far as possible. Place end of push rod against edge of work bench. Insert spreader tool into open end of cap and apply sufficient pressure to spread sides on push rod.

Dismantle Barrels

#1 Remove Barrel Bushing

Use alcohol lamp, solid hook bar puller and rubber square. Grasp small end of barrel with rubber square. Hold bushing end of barrel in flame until solder is melted. Place solid hook bar puller behind bushing and pull out.

#2 Remove Spring Assembly

Use solid hook bar puller. Insert solid hook bar puller into large end of barrel until spring is contacted. Hook spring and pull out.

Reassemble

#1 Replace Spring Assembly

Drop spring assembly into barrel with bushing end down.

PROCEDURE FOR STRATOWRITER REPAIR
(Cont'd)

Operation in Sequence

#2 Replace Barrel Bushing

Tools and Methods Used

Screw bushing into cap. Place solder strips around solder recess and apply flux. Push bushing into barrel until cap and barrel meet. Unscrew barrel from cap and hold in flame until solder is melted.

#3 Clean thoroughly inside with carbon tetrachloride.

TOUCHDOWN MODEL PENS

TO IDENTIFY THE TOUCHDOWN MODEL PENS: UNSCREW BARREL CAP. PULL PLUNGER OUT.
THE LARGE PLUNGER TUBE IS POSITIVE IDENTIFICATION.

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

- | | |
|---|---|
| #1 Remove Point Unit ----- | Place point in 120 degree water for 10 seconds to soften sealing compound. Place thumb on feed and forefinger on point and unscrew, keeping feed and point in line. If regular style point remove point and feed from barrel end as on page 45. |
| #2 Remove Barrel End, Protector, Tube and Sac From Barrel ----- | Use Rubber
Place rubber on barrel end and unscrew. |
| #3 Remove Protector Tube And Sac From Barrel End ----- | Grip barrel end tightly in one hand. With other hand grip protector tube near large end and rock off. Do not twist. Sac can now be removed. |
| #4 Remove Plunger Tube ----- | Small long shank screw Driver. Unscrew barrel cap. Place screw driver in barrel and through plunger tube until it contacts screw in barrel caps. Unscrew barrel cap. Plunger tube can now be removed from barrel. |
| #5 Remove "O" Ring ----- | Use Dull Pin or bend & file a small hook in paper clip. Place point of dull pin gently behind "O" Ring and gently remove. |

After dismantling the pen, all parts should be thoroughly cleaned and inspected and all worn, broken, or wrong parts should be replaced.

ASSEMBLE

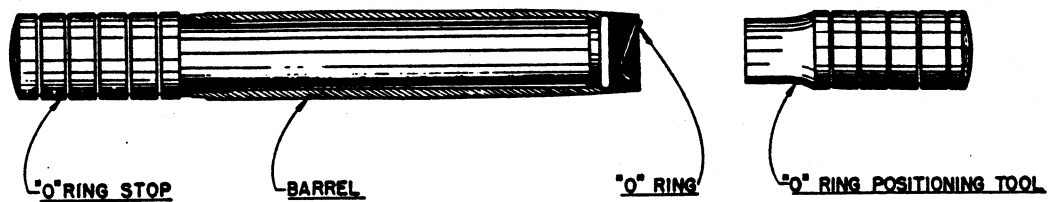
- | | |
|---------------------------|---------------------------|
| #1 Replace "O" Ring ----- | "O" Ring Positioning Tool |
|---------------------------|---------------------------|

SEE PAGE 59C

- #2 Replace Plunger Tube ----- Small long shank screwdriver.
Place screw on screwdriver.
Place rubber washer on screw
and insert into plunger tube,
insert plunger tube into barrel,
place shake-proof washer on
screw and screw barrel cap on
firmly. A drop or two of #30
motor oil can be placed on
the plunger tube to make it
work more smoothly. **WARNING!!
DO NOT USE CASTOR OIL!!!**
- #3 Replace Sac on barrel end ----- Use Sac Spreader and Shellac.
Be sure and use proper sac Use shellac freely on barrel end
as this type pen requires a tighter
seal than other types. Allow to
dry a few seconds before applying
sac. Place proper sac on spreader.
Insert barrel end into spread lip
of sac. Hold sac in place with
forefinger. Remove sac spreader.
Straighten sac.
- #4 Replace Protector Tube ----- Immediately place protector tube
over Sac. Push on barrel end until
tube touches threaded shoulder on
barrel end.
- #5 Replace Barrel End, Sac and ----- Screw barrel end into barrel. Use
Protector Tube a small amount of warm point seal-
ing compound on threads.
- #6 Replace and seal Point Unit ----- Use rubber and sealing compound.
Start point unit into barrel end
and spread warm sealing compound
evenly over exposed threads.
Grip feed and point firmly with
thumb on feed and forefinger on
point and tighten firmly. Clean
off excess sealing compound with
gasoline.

NOTE: If any point or triumph point unit repair is needed, refer to pages
60-64.

POSITIONING TOOL FOR "O" RING



INSTRUCTIONS FOR USING "O" RING POSITIONING TOOLS

Two sizes: Thin Model and Regular

1. Dismantle barrel. Refer to touchdown breakdown sheet, Page 59A.
2. Insert "O" ring stop tool in trunnion end of barrel (the end that has the metal ferrule) as far as it will go. NOTE: This tool is for 920S (long) or 920SM (short) barrels.
3. Start "O" ring into opposite end of barrel.
4. Use "O" ring positioning tool, and push and rotate tool to position "O" ring in recess.
5. Check "O" ring after removing positioning tool to be sure it is in recess.



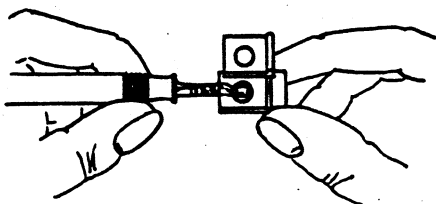
New style clip or clasp spring assembly and disassembly tool.

PROCEDURE FOR SHEAFFER PEN REPAIR

On all Sheaffer nibs and Triumph nib units the following are the operations, tools, and methods used in spacing, aligning, smoothing the nib and fitting the feed.

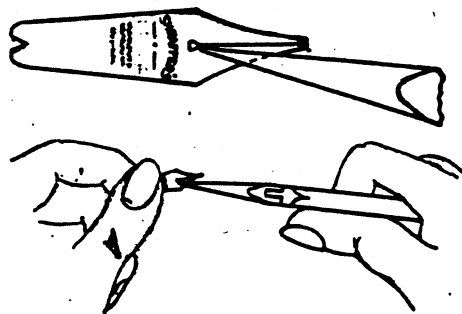
OPERATIONS

#1 Inspect Nib



#2 Properly Space Nib

(The degree of fineness is the key to the amount of space the nib should have. The finer the nib, the narrower the spacing.)



Correct position of pliers for adjusting nib.



Incorrect positions of pliers for adjusting nib.

TOOLS AND METHODS

----- Use magnifying glass.

Place nib against bottom of glass so that it shows through the opening. Examine the iridium, determine the degree of fineness.

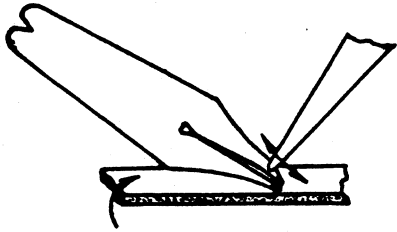
See illustration at left.

----- Use nib pliers.

Points should always be spaced far enough apart so light can be seen through entire length of the slit. Points that do not have enough space are adjusted by raising first one side, then the other, away from the feed or writing surface. Grasp the nib with the nib pliers and lift or spring up alternate sides. Do not make an abrupt bend in the nib. If the nib is spaced too much, reverse the process and spring sides down.

CAUTION: Keep the plier jaws away from the iridium tips or iridium will be broken off. When the adjustment is completed, the iridium tips must be exactly even on the writing surface.

#3 Aligning nib



Burnishing nib which is closed at tip.



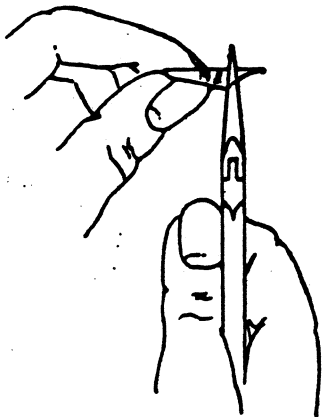
Nib correctly spaced.



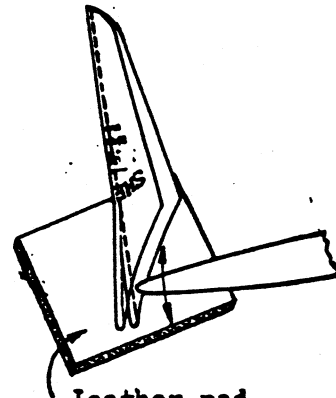
Incorrect. Nib is open on the face.



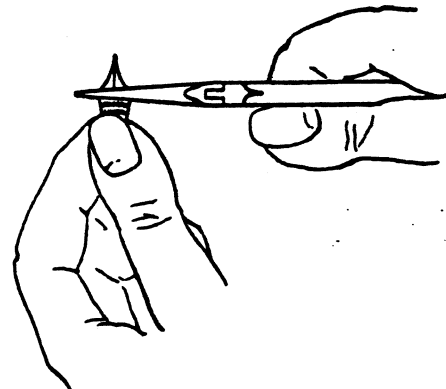
Incorrect Back



Closing nib that is open on the face.



Leather pad.
Burnishing nib which is forked at the center of slit.



Closing nib that is open on the back.

Use nib pliers and regular burnisher. Nibs should be straightened and spacing adjusted before pen is re-assembled. Nibs which are bent in at the tip can be adjusted by burnishing the outside of the nib where the bend occurs while the iridium tip is resting on a leather pad. Nibs which are forked at the tip are treated as above except that the uppermost side is pushed away with tip of burnisher while burnishing inside of lower nib. Nibs must be spaced the same width on the face as on the back. Nibs open too wide on the face can be adjusted by springing the shoulders of point together slightly. Nibs which open wider on the back than on the face are adjusted by pressing the nib lightly across the heart with the pliers.

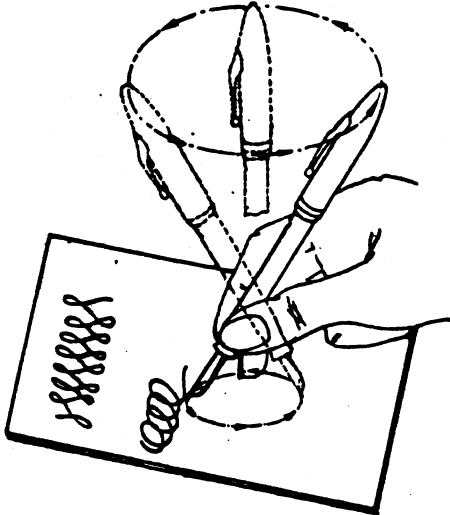
#4 Fit Feed to Nib

Use alcohol lamp.

After nib and feed are pushed into section or nib unit replaced in barrel, the feed is then ready to be fit to the nib. The old style flat feed must fit tightly all along the under side of nib to insure a correct flow. The feed is made of hard rubber. By quickly passing it through a flame a number of times, the rubber absorbs heat and becomes pliable. The feed, when pliable, is molded against the nib by pressing it with forefinger. When feed has been molded to nib, dip it in water. This cools feed causing it to retain its molded form. Use care to keep the section and barrel from heat as it is extremely inflammable. The new style streamlined or "C" feed is pushed and fit in the same manner as the regular flat comb feed. This type feed requires heat and pressure only at the tip ends of feed beyond combs, as do the feeds in the Triumph nib units. Take the magnifying glass and look through the heart pierce of point. Inspect narrow ink channel in feed. After fitting feed against nib, inspect the ink slot again to see that the slot has not been closed. Closing very slightly will do no harm, but if it is closed more than half way, the section should be removed and feed and nib driven out. The ink slot then may be opened by heating feed, after which it may again be assembled.

#5 Smooth Nib

CAUTION: Do not smooth nibs unless they need it. Tips must be even on writing surface before smoothing.



Use 4/0 smoothing paper and jewelers rouge.

If tips are even and nib scratches, the iridium may have a sharp or rough spot. This is removed on a special grade of fine smoothing paper. This paper should be placed on a firm smooth surface and a light coat of rouge rubbed over it to reduce the cutting power and to polish the iridium. To smooth nib, hold pen in a writing position and slowly move it in small circles. Finish up by writing continuous figure 8's. As the nib is moved over the paper, the position of pen should be changed continuously so a flat face will not be worn on nib tip. Use only moderate pressure and finger movement in making small circles and figure 8's. Care and skill must be exercised or more harm than good will be done. Never rub the nib on a stone or rough abrasive of any kind. The iridium must have a very smooth, mirror-like finish and any scratch or rough spot will be noticed when nib is used.

See illustration opposite.

On the new Triumph nibs that are threaded onto the section, the operations, tools, and methods used are as follows:

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Nib Unit from
Barrel -----

Place point in 120 degree water for 10 seconds to soften sealing compound. Use rubber for holding unit. Place thumb on feed and forefinger on nib and unscrew, keeping feed and nib in line.

NOTE: If the Feed and Point should break off in the section, use a three cornered file and push the broken part of feed down into barrel, then use File to unscrew section. Heat again if necessary.

#2 Flush Out Nib Unit -----

Use rubber bulb and Sheaffer cleaning solution. Fill bulb with solution. Insert point end of unit into bulb up to the solid part of the gold and flush.

#3 Remove nib from Section
and Feed -----

Use Rubber. Grip section and unscrew nib.

#4 Remove Feed From Section -----

Twist (to the right) and pull feed out.

After dismantling the nib units, all parts should be thoroughly cleaned and inspected and then all worn, broken, or wrong parts should be replaced.

REASSEMBLE

#1 Replace Feed in Section -----
(These are several different types of sections. Be sure it is the right one for the pen)

Making sure it is the right size feed, insert into section.

#2 Replace Nib on Section -----

Use rubber and shellac. Spread shellac over the nib threads on the section. Start nib on section and tighten. Wipe off excess shellac with alcohol.

#3 Straighten and Lock Feed
in Place -----

Use pliers. Take back end of feed in pliers and twist until in line with nib. Pull back to lock.

NOTE: For spacing, aligning the nib, and fitting the feed, see next sheets.

*JOB BREAKDOWN, TOOL AND PARTS LIST FOR CHANGING A PACKING UNIT ON ALL PENS
NOT CONTAINING OUR NEW VAC-FIL UNIT

<u>EQUIPMENT</u>	<u>TOOLS</u>	<u>PARTS</u>												
Lathe	2 Drills	Packing Units												
M. C. Thinner (available at factory)	<table border="1"> <thead> <tr> <th>Size</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>5/16"</td> <td>\$1.00 Net</td> </tr> <tr> <td>11/32"</td> <td>\$1.00</td> </tr> </tbody> </table>	Size	Price	5/16"	\$1.00 Net	11/32"	\$1.00	<table border="1"> <thead> <tr> <th>Size</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>#2</td> <td>\$.15 List</td> </tr> <tr> <td>#4</td> <td>.15</td> </tr> </tbody> </table>	Size	Price	#2	\$.15 List	#4	.15
Size	Price													
5/16"	\$1.00 Net													
11/32"	\$1.00													
Size	Price													
#2	\$.15 List													
#4	.15													

Place barrel in chuck with the packing end out. Face off old packing unit thread and take the proper size drill (see below) and drill to the depth of 9/32". Select proper size packing unit, (see below) paint with thinner, and insert into barrel. Caution: These repaired barrels should be allowed to set for 24 hours before using. These packing units must be cemented into the barrels because of the great amount of vacuum created by our plunger.

Barrel Size	Drill Size	Packing Units
All 3W's, 49 & 93W's; all Post War barrels not containing our new Vac-fil unit.	5/16"	#2
All 4W, 5W and 8W	11/32"	#4

IMPORTANT NOTE: The packing unit on vac-fil units are not drilled out, but are faced off in a lathe. Then cement new packing plug on unit. One size fits all units.

****PROCEDURE FOR REPAIR OF SHEAFFER POSTWAR PLASTIC CAPS WITH METAL THREAD SLEEVES****

<u>OPERATION IN SEQUENCE</u>	<u>DISMANTLE</u>	<u>TOOLS AND METHODS USED</u>
#1 Break Band Off Cap	-----	Cutting pliers. Grip one side of band with cutting pliers and bend cap down until band breaks off, being careful not to damage the plastic.
#2 Pick Sleeve Out of Cap	-----	Regular burnisher and needle nose pliers. Pick or push sleeve toward center of cap with burnisher until needle nose pliers can be inserted between sleeve and plastic cap. Again being careful not to damage plastic. Grip sleeve with pliers and twist out.

Caution: Use only ARABOL CEMENT FOR CEMENTING SLEEVES IN CAP.

REASSEMBLE

Select proper sleeve and band.

#1 Cement Sleeve and Band in Cap	-----	Arabol cement. Spread plenty of Arabol cement evenly on thread sleeve. Push into cap as far as possible.
#2 Wipe Excess Cement off Cap	-----	With a rag moistened in water wipe until all cement is removed from cap.

NOTE: These caps should be allowed to dry at least 12 hours after cementing.

**** PROCEDURE FOR REPAIR OF SHEAFFER METAL CAPS WITH METAL THREAD SLEEVES ****

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Thread Sleeve -----

Thin sharp pointed tool.
Needle nose pliers. Check
depth of sleeve. Insert
sharp pointed tool between
cap and thread sleeve and
push or bend one side of thread
sleeve to center of cap.
Needle nose pliers can now
be inserted between cap and
sleeve. Grasp sleeve firmly
and twist out.

#2 Check Clip Spring -----

#3 Remove Dents -----

Metal Cap Burnisher.
With burnisher rub dent
from inside.

REASSEMBLE

#1 Select Proper Thread Sleeve -----

#2 Cement Sleeve into Cap -----

EC847 Cement
Alcohol Lamp
Spread cement evenly over thread
sleeve. Insert in cap to the
proper depth. Wipe excess cement
off cap with rag moistened with
carbon tetrachloride. Hold open
end of cap in flame of alcohol
lamp and heat to approximately
350°. Any more heat will cause
the plastic clip sleeve to burn.

**** PROCEDURE FOR REPLACING PLUNGER WASHERS ****

Because our plunger rods are again being made of stainless steel the biggest cause for plunger repair is the wearing of the rubber washer. It is not necessary to replace the whole plunger because of this condition. The only repair needed is to replace the washer. To do this follow the instructions below.

DISMANTLE

OPERATIONS IN SEQUENCE

TOOLS AND METHODS USED

#1 Remove Plunger Nut

Piece of rubber tube used to remove pencil tips, padded parallel pliers.

Place padded parallel pliers on plunger rod and rubber tube on plunger nut and unscrew.

#2 Remove Plunger Washer

If the backing washer should come off the plunger rod, replace it with a little shellac, being sure the curved side is toward the rubber washer.

REASSEMBLE

#1 Replace Plunger Washer on Rod

These washers come in only 3 sizes: #2-9/32", #4-21/64", and #8-25/64". Always be sure to select the proper size. Use the green plunger sheet to make sure of your selection.

#2 Replace Plunger Nut

Shellac, padded parallel pliers, rubber tube, used to remove pencil tips. Spread shellac on plunger rod threads. Be careful not to get any on the washer. Start plunger nut on rod. Grip rod with padded parallel pliers and plunger nut with rubber tube and tighten. The washer must have a cup shape when this operation is completed.

TRIUMPH PEN

SUPPLEMENT

TO

SHEAFFER'S

Repair Manual

NO. F 29

FILLING & CLEANING INSTRUCTIONS

FILLING A PLUNGER TYPE PEN

Unscrew cap at top of barrel and pull plunger out full distance (in case of desk pens unscrew quill); hold point within wide mouth of Skrip bottle.

Immerse entire point in Skrip, work plunger up and down several times. This cleans the pen and moistens the fissures in the fluid control.

The pen fills on the down stroke. For flushing purposes, pump plunger several times. On final down stroke allow point to remain in Skrip for ten seconds; tighten plunger cap or quill; wipe point clean with cloth or tissue.

NOTE: Changing weather conditions may cause water to appear in droplets on the point. Do not confuse this condensation with leakage; simply wipe it off!

FILLING A LEVER TYPE PEN

To fill your Lever type pen immerse the gold point in Skrip; open and close the lever; for flushing purposes open and close lever several times; allow point to remain in Skrip for ten seconds; remove and wipe point clean with cloth or tissue.

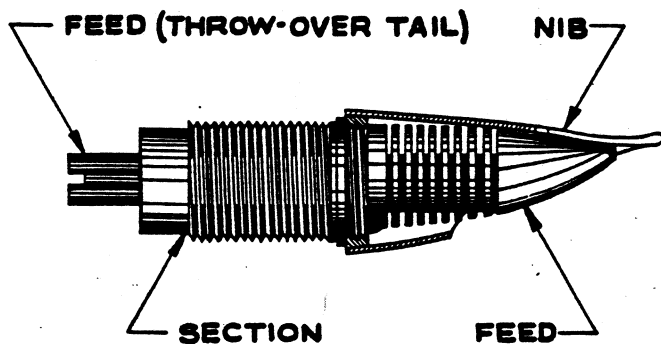
CLEANING OR WIPING INSTRUCTION TO AVOID COMPLAINTS ON FLOODING

Point, Feed, and finger grip must be wiped clean after filling. The feed on a Sheaffer pen serves as a sponge to absorb all surplus fluid which is fed to the writing point. If the combs of the feed are saturated from filling, they cannot take care of any extra fluid which might be expelled from the fluid chamber due to expansion of air inside the barrel. This condition will cause the pen to flood when there is absolutely nothing wrong with it mechanically. This inconvenience can be forestalled by carefully wiping the point, feed, and finger grip after each filling.

If you will look at the under side of the point, you will see the black feed with its comb cuts or overflow reservoirs. These cuts will be full of fluid after the filling operation and this fluid should all be drained away by applying an absorbent cloth or cleansing tissue to the slip of the point. When two spots of writing fluid as large as silver dollars appear on the cloth or tissue used for drying, or when the fluid stops draining off, the feed has been thoroughly emptied.



THE ABOVE ARE ACTUAL SIZE ILLUSTRATIONS



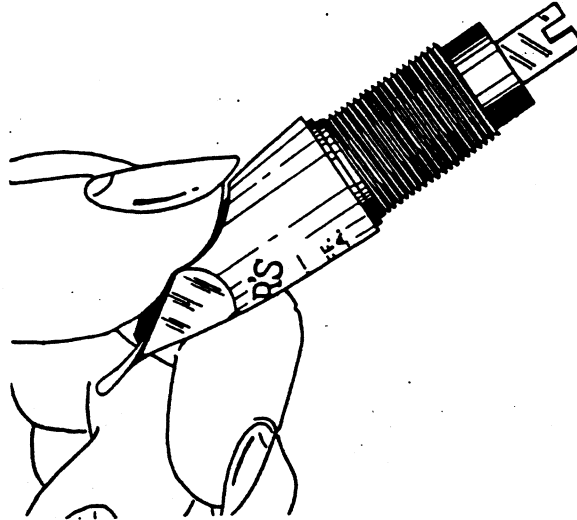
There are two types of Nib units, one is as shown on illustration in which the nib is threaded onto the section, the other is a spun-on-assembly and can not be removed from the section.

IF PEN FAILS TO FLOW PROPERLY, check the spacing of the nib making sure that there is a space of the proper dimension at the tips. If the tips are tightly closed, the pen cannot feed. To be able to see that the slit is open it may be necessary to draw a piece of paper through it to remove any foreign matter. This operation may open the slit only temporarily. To see whether the adjustment is temporary or permanent invert nib from regular writing position and with a rolling motion apply a moderate amount of pressure to the writing tip. If spacing remains open, set is OK; if it closes, the tip of the feed should be heated and pulled away from contact with the nib. The spacing should then be readjusted; after which, the tip of the feed should be reheated and molded back against the gold nib.

If the pen still fails to feed properly, it may be that some foreign substance has become lodged in some of the small openings in the feed. Sometimes it is possible to remove this obstruction by flushing Sheaffer cleaning solution through the feed and nib assembly by the use of a rubber bulb.

This operation is as follows: Fill rubber bulb with Sheaffer's cleaning solution. Insert writing end of nib and feed into opening in the bulb, forcing the unit in until all of the cut away portion of the gold nib is covered. Then flush vigorously. Sometimes it is necessary to repeat the flushing a number of times.

If pen still fails to feed, a new unit or feed will have to be installed. In case of the screw-on type nib and section (as is shown on illustration) the nib can be screwed off, the old feed removed, and a new one inserted.



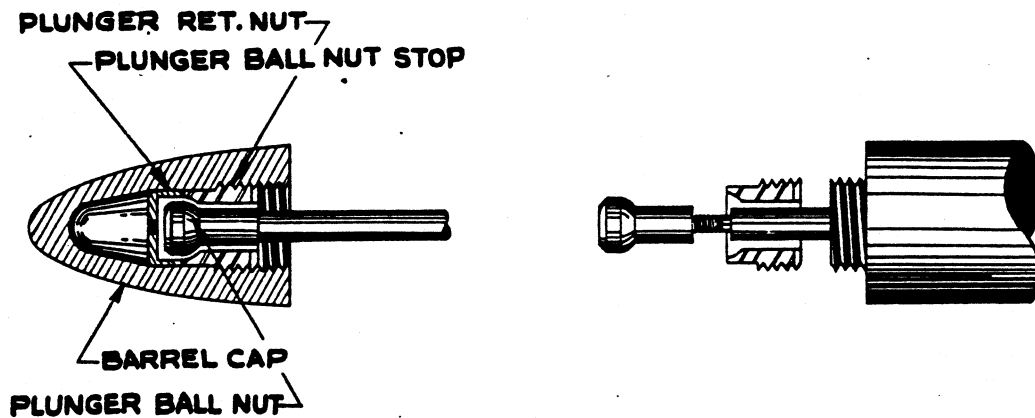
In screwing in unit, always pull out plunger first to avoid breaking off either plunger nut or throw-over tail.

To remove units, it may be necessary to heat the barrel-end enough to soften the thread seal. To do this, immerse approximately 3/8" to 1/2" of the radite in back of the nib into water (heated to approximately 130 degrees F). Care should be taken not to exceed this temperature as the feed may become loosened or the barrel-end distorted or enlarged.

LEAKS AT SEAL: We have a special solution called Sheaffer thread seal for sealing this joint. It must be heated to about 120 degrees F. or until it is about the consistency of heavy syrup. Start point unit into barrel end until 1/8" space remains between barrel and gold nib. Spread seal evenly on thread. (Use a small wire or paper clip for this operation). Tighten point unit, grasping nib and feed firmly so that nib does not twist out of position in relation to the feed.

Remove surplus seal with gasoline. Care should be exercised in cleaning so that no seal will contact the feed or slit of the point. (This is the same mixture we are using at the factory with best results).

NOTE: The point of the feed should be centered over the slit in the gold point. If it has become twisted out of line, grasp feed tail with pliers and twist back into alignment. The feed should be twisted clockwise even if it is necessary to make a complete turn.

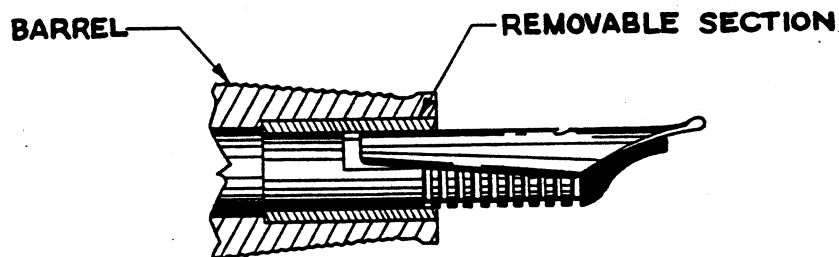


ASSEMBLING PLUNGER IN BARREL CAP: After the plunger has been assembled in the barrel, place the retaining nut on the plunger rod with the slotted end toward the barrel. Place a small amount of shellac on the threaded portion of the plunger rod. Grasp with rubber finger or pad and screw the ball plunger nut down tight against plunger rod shoulder.

Put the plunger nut-stop into the barrel cap. Next, screw the retaining nut into barrel cap and screw down tight with lock nut wrench shown as #15, page 6, in our regular repair manual. It may be necessary to grind or file the points of this tool down slightly so that they will fit this slot. This assembly should permit the barrel cap to turn freely on the plunger rod.

The first few pens made were not equipped with the plunger nut stop. In this case, it will be necessary to drill out the barrel cap to a depth of $11/32$ " using a $13/64$ " diameter drill, which will permit an assembly as explained above.

Plunger can be assembled in barrel as shown in Repair Manual #F 29.

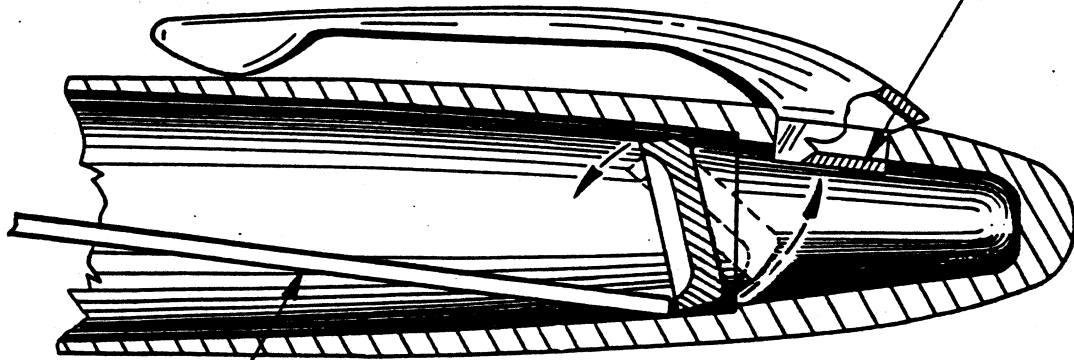


REPAIRING #23, #33, & #77 PENS: On all #23, #33, & #77 plunger pens it will be necessary before removing or inserting a plunger unit, to extract the section from the mouth of the barrel if it doesn't come out when the feed is removed. The section can be removed with a 33 section puller. Note: The part referred to as the section in this type of pen is a small straight plastic sleeve which is inserted its full length into the barrel and the spiral grip is part of the barrel.

The points are removed by working them loose in the section and pulling them out.

CLIP REPAIR: There are two types of clip assemblies - the spring type and the ear type.

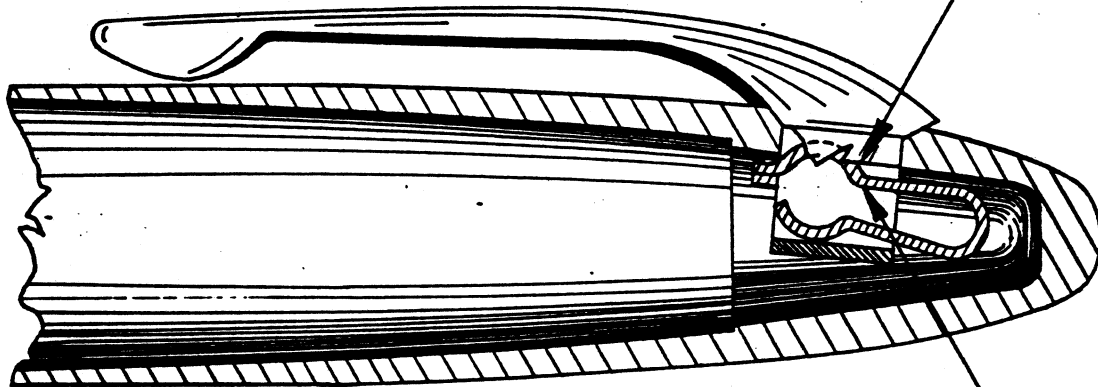
OLD TYPE ATTACHMENT



PUSH WITH NARROW FLAT TOOL HERE TO REMOVE INNER CAP.

REPAIRING EAR TYPE CLIP: The same procedure is followed for repairing ear type clips as has been used for repairing the balance line clip. Only shops equipped with clipping arbors can handle such repairs. The inner cap, which is a small flat radite disc, must first be removed by placing a narrow flat tool against the disc near the wall of the cap, opposite the clip and applying sufficient pressure to break it loose. After re-clipping, replace the inner cap; this inner cap seals off writing fluid from clip spring and air from the point.

NEW TYPE ATTACHMENT



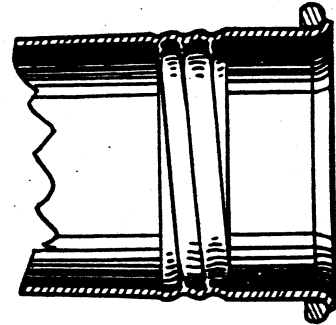
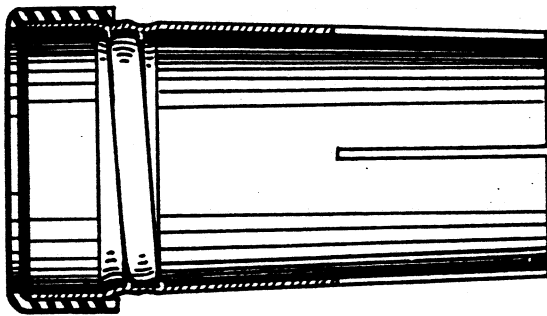
CLIP SPRING

SPRING TYPE CLIPS: The inner cap can be removed as illustrated above.

Should the clip come out or become loosened, the probable causes are that the clip spring has lost its tension, or that the joint on the clip box has become unsoldered.

After removing the inner cap, the clip spring will have to be pulled out. This may be done with needle nosed pliers. If the spring has lost its tension, replace spring, using clip spring assembling tool. If the soldered joint on the clip has been broken, supply new clip. After spring has been positioned with spring assembling tool, force spring into its proper depth by pushing vigorously on a rod similar to the plunger assembling tool.

TO REPLACE DISC INNER-CAP: Dip disc in arabol cement using tweezers. Place disc on a flat end rod and place cap over rod, forcing disc firmly into position. Rotate cap on rod to break cohesion between the disc and top of flat end rod. Do not allow sufficient surplus to remain on disc so that there is danger of the nib touching it and ruining the alignment after it is screwed in the cap.



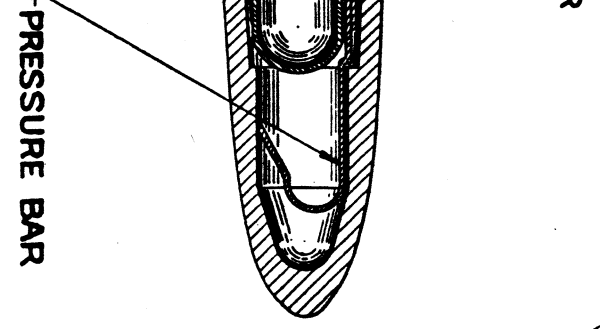
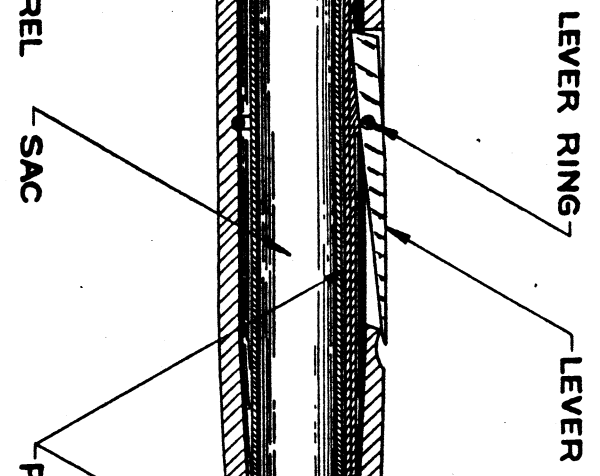
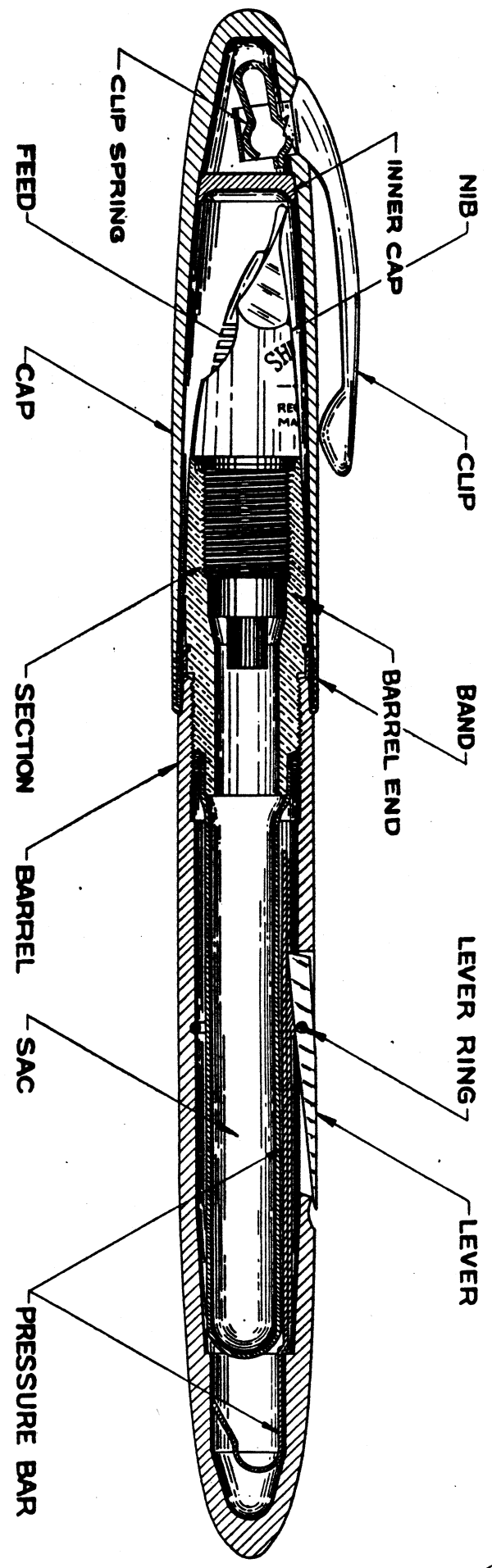
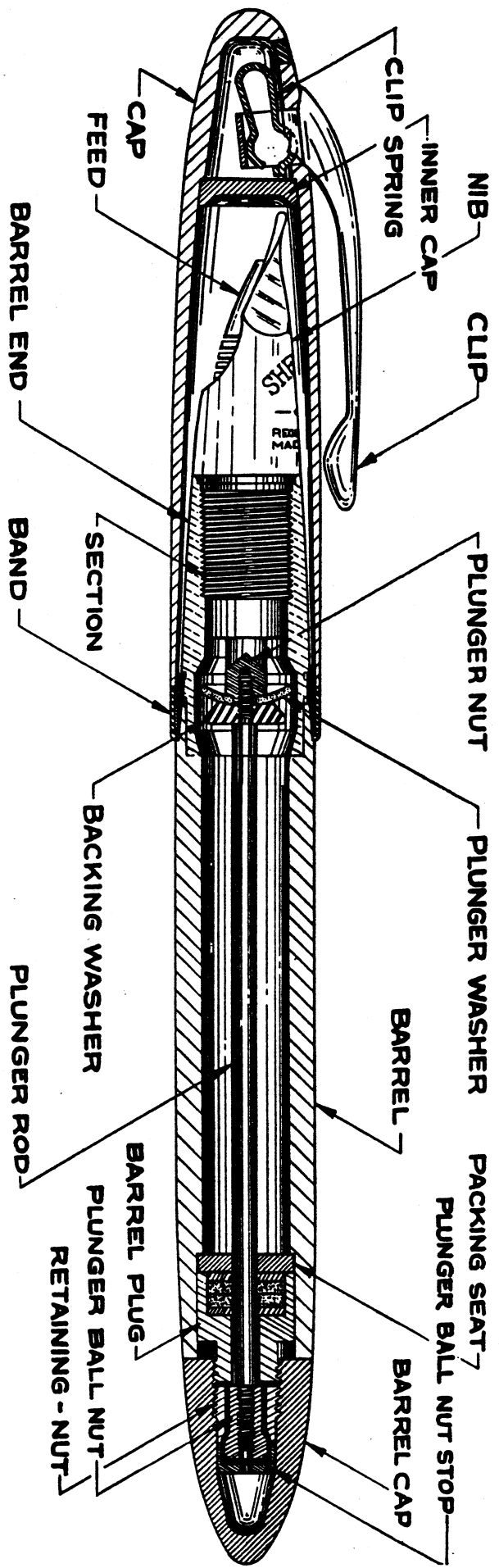
REPLACING CAP THREAD SLEEVE: On the bead band type pen which uses a metal thread sleeve, the sleeve is held in the cap with arabol cement. The cement is applied freely to the reduced portion of the thread sleeve and the sleeve pushed into cap as far as possible. Wipe off excess cement with damp rag.

The later bead banded models do not have a metal thread sleeve. The bead is merely a strengthening band which is spun onto the end of the cap. The threads in this cap are cut directly into the radite. These threads are of a special design which have been properly adjusted at the factory and no attempt should be made to rework them.

In caps having wider bands, assemble by applying arabol cement as described above and force thread sleeve into cap.


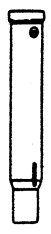



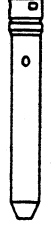
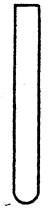



CAP STRIPS: If metal thread sleeve in cap is stripped, replace with new sleeve. If metal thread ring on barrel is stripped:

1. Vac-fil pens
 - a. On all vac-fil, which are equipped with vac-fil insert, replace barrel.
 - b. On vac-fil pens equipped with new insert, replace thread ring.
2. Lever-fil pens. Replace thread ring.









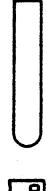



TOUCHDOWN FILLER

920S

	920S BARREL CAP LOCK WASHER	.04	Order for All Pens Separately
	920S (LOW) PLUNGER TUBE	.40	Order for: 3395-Crest Masterpieces 9905 auto-Autograph 9905-Crest Deluxe 9905XC-Sentinel Deluxe 920S-Valliant 825-Statesman
	920S GASKET SCREW RING	.04	Order for All Pens
	920S (LOW) BARREL	\$2.60	Complete Bbl. Assembly (Bbl. Cap Shell "O" Ring Ferrule Screw Washer Plunger Tube)
	920S BELL FERRULE	.15	See Note Lower Left Corner
	920S (LOW) PROTECTOR TUBE	.40	Order for: 3395-Crest Masterpiece 9905 auto-Autograph 9905-Crest Deluxe 9905XC-Sentinel Deluxe 920S-Valliant 825-Statesman
	920S (LOW) SACK	.10	Order for:
	920S THD. RING	.50	See Note Lower Left Corner
	920S BELL END	.60	Order for All Models with Exception of 925 and 925M See Bottom Drawing
	NO. 92 MON. L.F.T. NIB UNIT	\$6.00	

TOUCHDOWN FILLER

920 SM





	920S BARREL CAP LOCK WASHER	.04	Order for: 920SM auto-Autograph Tuckaway 290SM-Crest Deluxe Tuckaway 290SMXC-Sentinel Deluxe Tuckaway 825M-Tuckaway
	920SM (LOW) PLUNGER TUBE	.40	Order for: 920SM auto-Autograph Tuckaway 290SM-Crest Deluxe Tuckaway 290SMXC-Sentinel Deluxe Tuckaway 825M-Tuckaway
	920S GASKET SCREW RING	.10	Complete Bbl. Shell (Bbl. Assem. Above) Specify Color and Amount and Order for: 920SM auto-Autograph Tuckaway 290SM-Crest Deluxe Tuckaway 290SMXC-Sentinel Deluxe Tuckaway 825M-Tuckaway
	920SM (LOW) BARREL	\$2.60	Complete Bbl. Shell Assembly (See Bbl. Above) Specify Color and Amount and Order for: 920SM auto-Autograph Tuckaway 290SM-Crest Deluxe Tuckaway 290SMXC-Sentinel Deluxe Tuckaway 825M-Tuckaway
	920S BELL FERRULE	.15	Order for: 920SM auto-Autograph Tuckaway 290SM-Crest Deluxe Tuckaway 290SMXC-Sentinel Deluxe Tuckaway 825M-Tuckaway
	920SM (LOW) PROTECTOR TUBE	.40	Order for: 920SM auto-Autograph Tuckaway 290SM-Crest Deluxe Tuckaway 290SMXC-Sentinel Deluxe Tuckaway 825M-Tuckaway
	920SM (LOW) SACK	.10	Order for:
	920S THD. RING	.50	See Above
	920S BELL END	.60	See Above
	NO. 92 MON. L.F.T. NIB UNIT	\$6.00	

NOTE. All 920S Thread rings and ferrules are chrome and are used on all pens with the exception of the 3395-Crest Masterpiece

920S auto-Autograph
920SM auto-Autograph Tuckaway

These pens take the 920S auto thread, ring and ferrule which is gold.

825 S PARTS

	825S THD. RING	.50	Order for: 825 and 825M
	825S BELL END	.60	Order for: 825 and 825M
	825S FEED	.40	
	* 8 MON. L.F.T. PLATED NIB	\$5.00	

WHEN ORDERING CAPS:

Specify—Symbol, model, color and amount

All Prices shown are List and are subject to change without notice

SHEAFFER'S POINT (NIB)
 GAUGE CHART
 SHOWING DISTANCE
 SHEAFFER POINTS (NIBS)
 SHOULD EXTEND OUT
 OF SECTIONS

Old Style Flat End #8				46 - Sheaffer's Flat Ends	\$ 5.00	23	32nds
Lifetime	\$ 8.75	30	32nds.	530 " Flat Ends	5.00	23	"
8T-8W-82T-82W-82S	10.00	28	32nds.	5FT - T & W Admiral	5.00	23	"
74-74SM	7.50	28	"	53V - FT Milady	5.00	23	"
46A & W Tuckaway	12.00	26	"	55T-52T-52S Admiral	5.00	23	"
74T & W Statesman	10.00	26	"	3-25 - Sheaffer	3.25	22	"
74FT Statesman	10.00	26	"	3-T & W Craftsman	3.50	22	"
73T & W. Sovereign	8.75	26	"	3-T & W Craftsman-Flexible	3.50	22	"
77T & W Sovereign	8.75	26	"	23T & W Cadet	2.75	22	"
74V Lifetime	7.50	25	"	33T-33S & W Craftsman	3.50	22	"
73V & W Lady Sheaffer	8.75	25	"				

USE THIS CHART WITH
 SHEAFFER'S POINT (NIB) GAUGE